

U.S. Appln. No. 10/715,892  
Page 4

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A method of producing a weld between two ~~aluminum alloy~~ sheets comprising aluminum, comprising the steps of:
  - (A) pressing the sheets into contact with each other;
  - (B) producing a molten weld nugget at a spot between the contacting sheets, comprising placing the sheets between a pair of electrodes and passing electrical current through the sheets; and,
  - (C) promoting the formation of an equiaxed grain structure within the weld nugget by introducing particles into the molten nugget on which the equiaxed grain may grow as the nugget cools and solidifies.
2. (Currently Amended) The method of claim 1, wherein the particles ~~contain~~ comprise Ti.
3. (Currently Amended) The method of claim 1, wherein the particles ~~are a material selected from the group consisting of~~ comprise at least one of:
  - (a) Al + Ti<sub>x</sub>
  - (b) Al + Ti + C<sub>x</sub>

U.S. Appin. No. 10/715,892  
Page 5

- (c) Ti-B alloy,
- (d) Na,
- (e) Al + Ti-B alloy,
- (f) Al-Ti-B-Re alloy or
- (g) Al-Ti-C alloy.

4. (Currently Amended) The method of claim 1, wherein the particles ~~are a material containing~~ comprise Na.

5. (Currently Amended) The method of claim 1, wherein step (C) is performed by introducing a powder ~~containing~~ comprising the particles between the ~~aluminum~~ sheets in the area of the spot.

6. (Currently Amended) The method of claim 1, wherein step (C) is performed by introducing a film of material ~~containing~~ comprising the particles between the ~~aluminum~~ sheets.

7. (Currently Amended) The method of claim 1, wherein step (C) is performed by applying a paste ~~containing~~ comprising the particles to at least one of the sheets in the area of the spot before step (A) is performed.

8. (Currently Amended) The method of claim 1, wherein step ~~(B)~~ (C) is performed by ~~passing an electrical current through the sheets at the area of the spot~~

U.S. Appln. No. 10/715,892  
Page 6

introducing a film of material comprising the particles between the sheets before step (A) is performed.

9. (Canceled)

10. (Currently Amended) A method of producing a fusion bond between two aluminum-alloy workpieces comprising aluminum, comprising the steps of:

(A) bringing areas of the workpieces into contact with each other;

(B) melting a spot on the contacting workpiece areas comprising placing the workpieces between a pair of electrodes and passing electrical current through the two workpieces; and,

(C) promoting the growth of equiaxed grain structure within the molten spot as the molten spot cools and solidifies, the growth promotion being performed by introducing a substance into the molten spot, ~~selected from the group consisting of the~~ substance comprising at least one of:

(a) Al + Ti<sub>1</sub>

(b) Al + Ti + C<sub>1</sub>

(c) Ti-B alloy<sub>1</sub>

(d) Na<sub>1</sub>

(e) Al + Ti-B alloy<sub>1</sub>

(f) Al-Ti-B-Re alloy<sub>1</sub> or

(g) Al-Ti-C alloy.

U.S. Appl. No. 10/715,892  
Page 7

11. (Currently Amended) The method as set forth in claim 10, wherein step (C) is performed by introducing a film ~~containing~~ comprising the substance between the ~~aluminum-alloy~~ workpieces comprising aluminum.

12. (Currently Amended) The method of claim 10, wherein step (C) is performed by applying a paste ~~containing~~ comprising the substance to one of the workpieces.

13. (Currently Amended) The method of claim 10, wherein ~~steps~~ step (C) is performed by ~~applying~~ introducing a powder ~~containing~~ comprising the substance between the workpieces.

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Canceled)

U.S. Appl. No. 10/715,892  
Page 8

20. (Canceled)

21. (Canceled)

22. (Canceled)

23. (New) A process as set forth in claim 1 wherein the particles comprise Ti and  
B.

24. (New) A process as set forth in claim 1 wherein the particles comprise Ti and  
C.

25. (New) A process as set forth in claim 1 wherein the particles comprise Ti and  
Re.

26. (New) A process as set forth in claim 10 wherein the particles comprise Ti and  
B.

27. (New) A process as set forth in claim 10 wherein the particles comprise Ti and  
C.

28. (New) A process as set forth in claim 10 wherein the particles comprise Ti and  
Re.